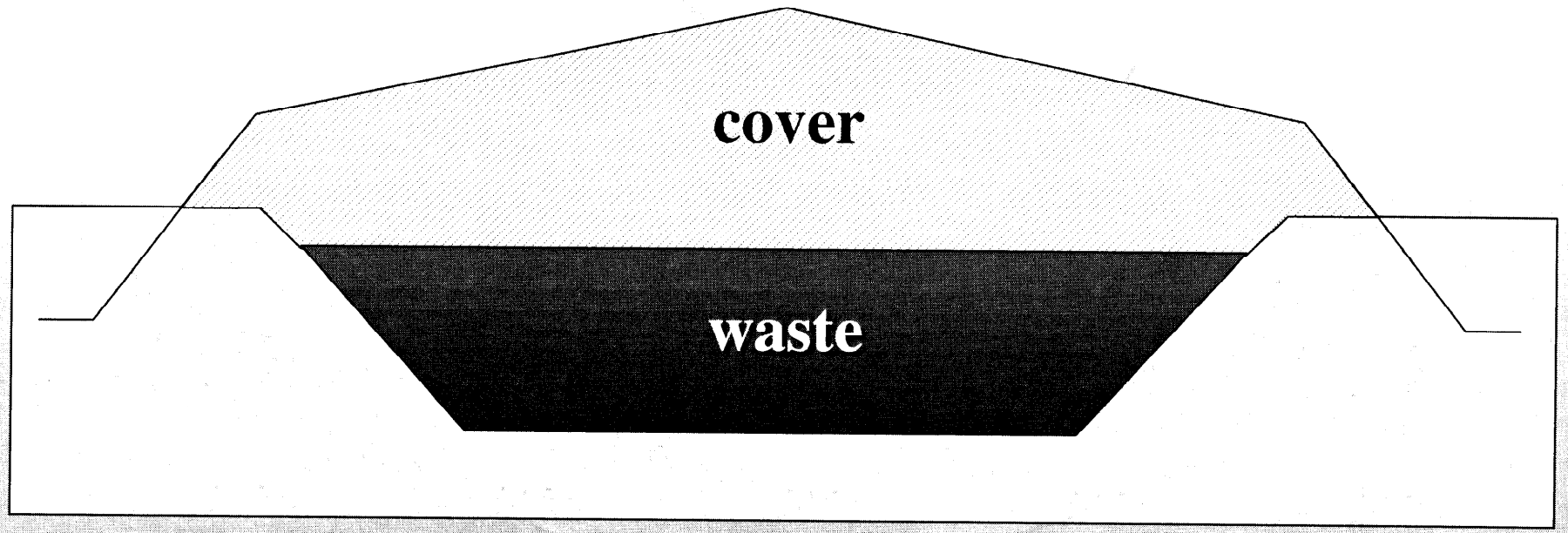
Formal Presentation
In Response
To IDEQ Comment # 66

INEEL CERCLA Disposal Facility Final Cover 60% Hydrologic Model



INEEL

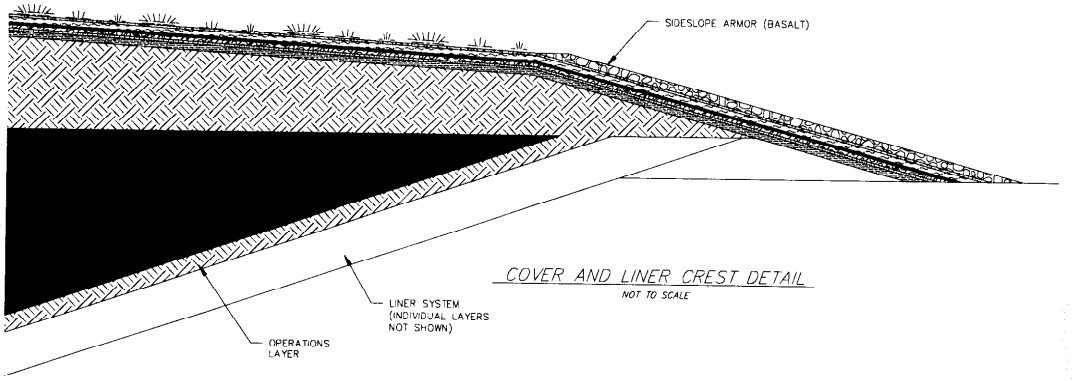
ICDF Landfill Final Cover Hydrologic Model

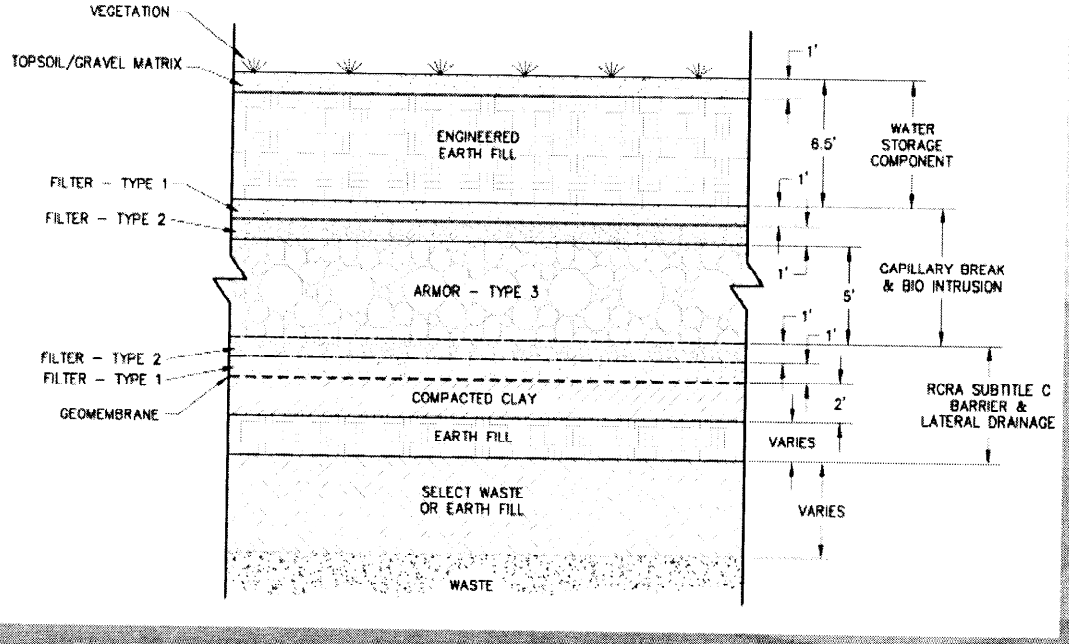
Discussion Topics

1. Review 30% Hydrologic Cover Study
2. Review 60% Hydrologic Cover Study
3. IDEQ Comments
4. Path Forward

30% Final Cover

Proposed Remedial Design



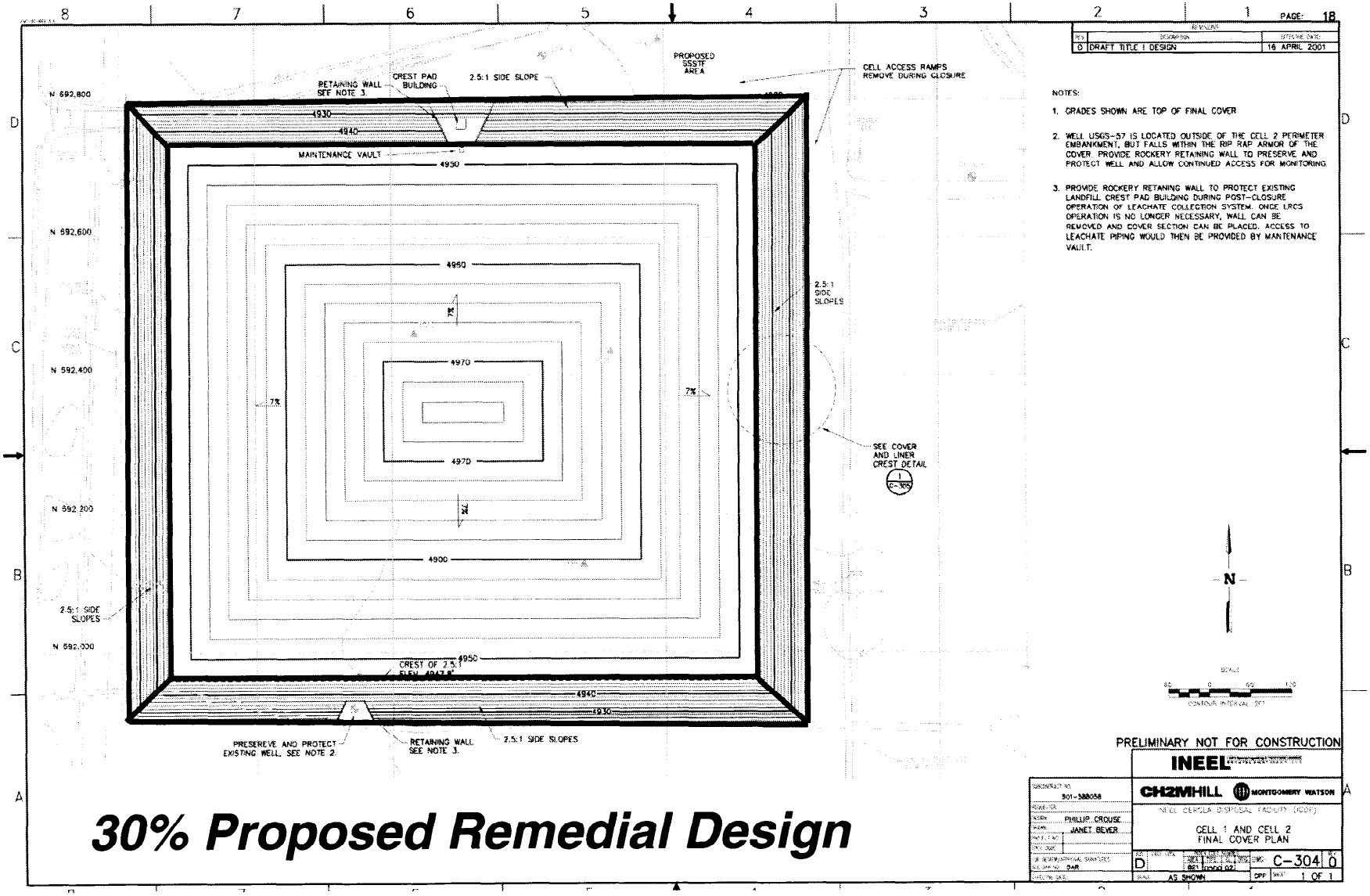


Typical Layering Detail

Cover Highlights

- Provides long-term reduction in infiltration rates
- Promotes positive drainage
- Accommodates settling and subsidence
- A thick layer and sideslope armor of basalt serves as an intrusion barrier for at least 1,000 years
- Complies with RCRA Subtitle C requirements
- Configured to fit within ICDF boundaries and physical constraints

30% ICDF Landfill Final Cover Design



30% Proposed Remedial Design

30% ICDF Landfill Final Cover Design

Proposed Remedial Design

Cover System Design Considerations

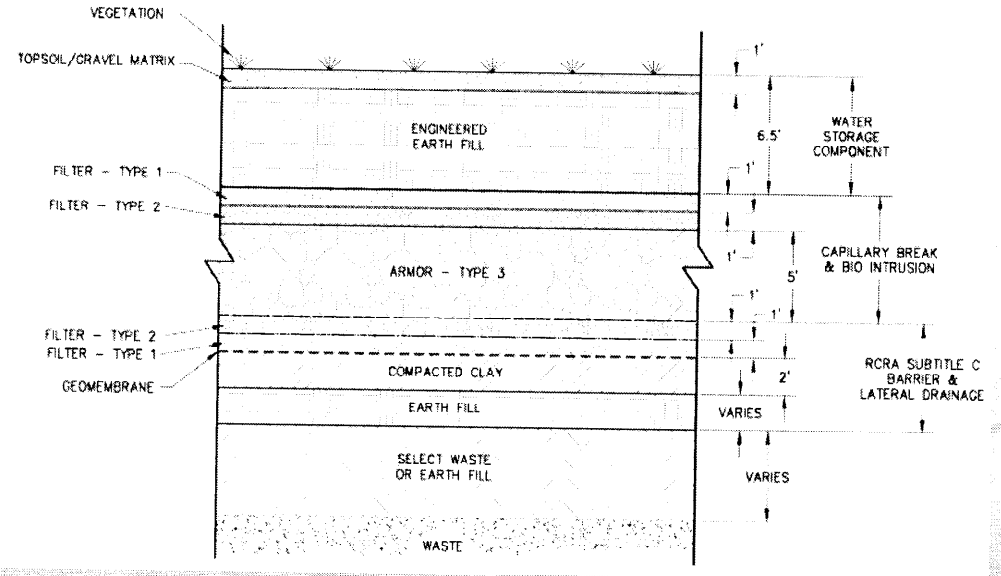
TABLE 1
COVER SYSTEM DESIGN CONSIDERATIONS

Design Consideration	Applicable ARAR	Performance Design Criteria	Remarks
Surface Erosion	EPA Guidance Documents, DOE M 435.1	Less than 2 ton/acre/year	The use of a soil/pea gravel surface will be evaluated to minimize erosion.
Surface Water Control	DOE M 435.1	Ditches sized to carry the PMF flow generated from the PMP event	PMP is larger than a precipitation event with a 1,000 year return interval
Rip Rap Size	DOE M 435.1	Rip rap will be sized to withstand overland flows from PMP and concentrated flows from the PMF	PMP is larger than a precipitation event with a 1,000 year return interval
Cover Percolation	40 CFR Part 264	Minimize long term infiltration	Long term modeling completed to simulate 1,000 years in EDF 279 – Hydrologic Modeling
Cover Grades	40 CFR Part 264	Long term grades greater than 3%	Settlement calculations completed to determine long term settlement in EDF 266 Subsurface Consolidation
Cover Slope Stability	DOE M 435	Long Term Static SF = 1.5 Short Term Static SF = 1.3 Long Term Pseudostatic SF = 1.3 Short Term Pseudostatic SF = 1.1	Static stability is not affected by time on the order of 1,000 years. Seismic event with return interval of 10,000 years used to determine pseudostatic stability
Biointrusion	DOE M 435	To be determined	Materials used to eliminate biointrusion will not be affected by time period of 1,000 years
Vegetation	To be determined	To be determined	Existing studies at INEEL will be used to determine cover vegetation
Compacted Clay Permeability	40 CFR Part 264	Less than $1x10^{-7}$ cm/sec	Soil amendment study (EDF 272) and the Phase 1 Construction Test Pad results will be used to determine liner design.
HDPE Geomembrane Puncture Resistance	40 CFR Part 264	To be determined	Geomembrane puncture resistance is a function of the materials it contacts not dependent on time
Filter Criteria	40 CFR Part 226	To be determined	
Drain Layer Clogging	40CFR, 264 CFR	To be determined	

- **Focus of infiltration evaluation**
  - **30% Design Package Volume 2 -Hydrologic Modeling of Final Cover (EDF-ER-279)**
- **Focus of Landfill Compaction/Subsidence Study**
  - **30% Design Package Volume 3 - Landfill Compaction/Subsidence Study (EDF-ER-267)**
- **Remainder of the design considerations to be addressed in the Title 2 90% Remedial Design Package**

30% ICDF Landfill Final Cover Design

Infiltration Evaluation Approach



Final Landfill Cover

Section Used for Model